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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,038	05/23/2000	Mark Sean Hefty	219.38022X00	4371

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EXAMINER	
NGUYEN, THANH T	
ART UNIT	**PAPER NUMBER**
2144	10

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/576,038	HEFTY ET AL.	
	Examiner	Art Unit	
	Tammy T Nguyen	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *(3)* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 November 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

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Detailed Office Action

1. This action is in response to the amendment filed on **November 28, 2003**

2. Claims **1-31** have been examined.

Response to Arguments

3. Applicant's arguments with respect to claims1-31 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leger et al., (hereinafter Leger) U.S. Patent No. 5,771,356 in view of Garcia et al., (hereinafter Garcia) U.S. Patent No. 6,493,343.

6. As to claim 1, Leger et al teaches the invention as claimed, including a method of transfer

data in a networked system between a local memory in a local system and a remote memory in a remote system, the local memory including at least a first buffer and second buffer region, the method comprising:

associating the first buffer region with a first transfer operation (Fig.5A, col.2, line 51 to col.3, line 13, and col.7, lines 40-63);

determining whether a size of the first buffer region exceeds a maximum transfer size of the networked system (Fig.4A, Bus Side does the same function as buffer region size, col.2, line 51 to col.3, line 13, col.8, lines 20-41);

associating portions of the second buffer region with the first transfer operation if the determining determines that the size of the first buffer region is less than the maximum transfer size and associating portions of the second buffer region with a second transfer operation if the determining determines that the size of the first buffer exceeds the maximum transfer size (Fig.4A, Soft threshold, Hard threshold function as first buffer and second buffer, abstract, col.2, line 60 to col.3, line 13, col.9, lines 15-30, and col.9, line 47 to col.10 line 11); and

performing the first transfer operation (col.7, lines 39-63).

Leger does not teach the receiving a remote direct memory access (RDMA) request. However, Garcia teaches the receiving a remote direct memory access (RDMA) request (col.7, line 64 to col.8, line 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Leger and Garcia to have a remote direct memory access (RDMA) in a communication system because it would have an efficient system that can provide specific function which lets one computer directly place information into the memory of another computer.

7. As to claim 2, Leger teaches the invention as claimed, wherein the RDMA request relates to a read operation and the first transfer operation comprises transferring data from the remote memory to the local memory (col.3, lines 1-14, col.5, lines 53-65).

8. As to claim 3, Leger teaches the invention as claimed, wherein if the size of the first buffer region exceeds the maximum transfer size of the network system, then the first buffer region is also associated with the second transfer operation (col.2, lines 51-67, and col.8, lines 10-30, and col.9, lines 35-67).

9. As to claim 4, Leger teaches the invention as claimed, wherein the RDMA request relates to a write operation and the first transfer operation comprises transfer data from the local memory to the remote memory (col.9, lines 32-50)

10. As to claim 5, Leger teaches the invention as claimed, wherein if the size of the first buffer region exceeds the maximum transfer size of the networked system, then the first buffer region is also associated with the second transfer operation (col.9, lines 50-67, col.8, lines 20-40).

11. As to claim 6, Leger teaches the invention as claimed, wherein further comprising performing the second transfer operation between the local memory and the remote memory (col.8, lines 20-40, col.9, lines 15-65).

12. As to claim 7, Leger do not teach the invention as claimed, wherein the network system comprises one of an NGIO system, a VI system and an Infiniband system. However, Garcia teaches the network system comprises one of an NGIO system, a VI system and an Infiniband system (col.3, lines 30-45, and col.4, lines 50-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teaching of

Leger and Garcia to have VI system including in communication system because it would be useful to address these needs by providing a compatible upgrade path to even higher performance interconnects and products.

13. As to claim 22, Leger teaches the invention as claimed, including a system for transferring data in a networked system between a local memory in a local system and a remote memory in a remote system, the local memory including at least a first buffer and second buffer region, the method comprising:

the processor determining whether a size of the first buffer region exceeds a maximum transfer size of the networked system (Fig.4A, Bus Side does the same function as buffer region size, col.2, line 51 to col.3, line 13, col.8, lines 20-41), the processor associating portions of the second buffer region with a first buffer region is less than the maximum transfer size and associates portions of the second buffer region with a second transfer operation if the processor determines that the size of the first buffer exceeds the maximum transfer size (Fig.4A, Soft threshold, Hard threshold function as first buffer and second buffer, abstract, col.2, line 60 to col.3, line 13, col.9, lines 15-30, and col.9, line 47 to col.10 line 11); and

an input/output device that perform the first transfer operation between the local memory and the remote memory (Fig.2, local Station 200 and Remote station 206, 207).

Leger does not teach the receiving a remote direct memory access (RDMA) request. However, Garcia teaches the receiving a remote direct memory access (RDMA) request (col.7, line 64 to col.8, line 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Leger and Garcia to have a remote direct memory access (RDMA) in a communication system because it would have an efficient system that can

provide specific function which lets one computer directly place information into the memory of another computer.

14. As to claim 23, Leger teaches the invention as claimed, wherein the RDMA request relates to a read operation and the first transfer operation comprises transferring data from the remote memory to local memory.

15. As to claim 24, Leger teaches the invention as claimed, wherein if the size of the first buffer region exceeds the maximum transfer of the networked system, then the first buffer region is also associated with the second transfer operation (Fig.4B, 403, 305).

16. As to claim 25, Leger does not teach the invention as claimed, wherein the RDMA request relates to a write operation and the first transfer operation comprises transferring data from the local memory to the remote memory. However, Garcia teaches the RDMA request to write operation and the transfer data Leger does not teach the receiving a remote direct memory access (RDMA) request (col.7, line 64 to col.8, line 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Leger and Garcia to have a remote direct memory access (RDMA) in a communication system because it would have an efficient system that can provide specific function which lets one computer directly place information into the memory of another computer.

17. As to claim 26, Leger teaches the invention as claimed, wherein the local system comprises a first computer system and the remote system comprises a second computer system (Fig.2, Local Station 200, and Remote Station 206,207).

18. As to claim 27, Leger teaches the invention as claimed, wherein performing the first

transfer operation comprises performing the first transfer operation from the first computer system across a computer network to the second computer system (Fig.2, Local Station 200, and Remote Station 206,207).

19. As to claim 28, Leger teaches the invention as claimed, wherein associating portions of the second buffer region with the first transfer operation occurs prior to performing the first transfer operation (Fig.4B, all process of transferring buffer region).

20. As to claim 29, Leger teaches the invention as claimed, wherein the local system comprises a first computer system and remote system comprises a second computer system (Fig.2, Local Station 200, and Remote Station 206,207).

21. As to claim 30, Leger teaches the invention as claimed, wherein the transferring device performs the first transfer operation by transferring data from the first computer system across a computer network to the second computer system (Fig.2, Local Station 200, and Remote Station 206,207, Computer Network 205).

22. As to claim 31, Leger teaches the invention as claimed, wherein the RDMA managing device associates portions of the second buffer region with the first transfer operation prior to the transferring device performing of the first transfer operation (Fig.4A, 4B, 4C, Transfer operation).

23. Claims 14 and 21 have similar limitations as claim7; therefore, they are rejected under the same rationale.

24. Claims 8-13, and 15-20 have similar limitations as claims 1-6; therefore, they are rejected under the same rationale.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

27. Any inquiries concerning this communication or earlier communications from the examiner should be directed to **Tammy T. Nguyen** who may be reached via telephone at **(703) 305-7982**. The examiner can normally be reached Monday through Friday between 8:00 a.m. and 4:30 p.m. eastern standard time.

If you need to send the Examiner, a facsimile transmission regarding this instant application,please send it to **(703) 872-9306**. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, **David Wiley**, may be reached at **(703) 308-5221**.

TTN
February 10, 2004

DAVID WILEY
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